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**CONTRIBUTIONS TO THE DIPTEROLOGY OF
NORTH AMERICA.—I. SYRPHIDÆ.**

BY C. H. TYLER TOWNSEND.

It is proposed, in a series of papers under the above caption, to give notes and descriptions of North American Diptera in the Townsend collection, which now forms a part of the University of Kansas collection of Diptera. The present paper treats of the Syrphidæ, seventy-five species being enumerated. It is unnecessary to more than point out the use of describing specimens from different localities, showing wherein they differ from the original description, as I have done. By this means variations are tabulated, and the limits of species determined.

All of the types herein described are to be found in the University of Kansas collection, as well as all others heretofore described by the author.

1. *Microdon bombiformis* n. sp.

Length 13 mm. (with abdomen flexed under); actual length 14 mm. Differs from Williston's description of *tristis* as follows: Front and face of equal width, metallic green, clothed with pale brassy-yellow pile; transverse groove of front distinct. Dorsum of thorax, pleuræ, scutellum, and first and second segments of abdomen shining green, clothed with the same pale brassy-yellow pile, which is thickest on scutellum and thorax. Scutellum slightly emarginate behind, the corners corresponding to the spines being obtusely angular. Rest of abdomen short, black, hairy, more apparent on sides of third segment. Third segment deep, soft black, but shining, with a slight greenish lustre. Fourth and fifth segments uniformly black and shining, with a purplish lustre; ovipositor pale brownish, exerted. The abdomen is but little longer than wide. Legs black, only black hairy, but the hairs of tibiæ and tarsi show a golden reflection in oblique lights; tips of tarsi more brownish. The legs are stout, and the hind metatarsi are rather broad, but hardly more so than the other joints. Pulvilli and base of claws yellowish. Wings with all the veins broadly and evenly clouded with flavous smoky; the narrow spaces left are nearly hyaline.

Dixie Landing, Va. (near Washington, D. C.) June 1. One ♀.

I can hardly identify this with *megalogaster* Snow, from the difference in the wings.

2. *Microdon fuscipennis* Macq., Williston.

Williston describes only the male. The female differs as follows from his description:

Length 8.5 mm. Face and front very wide; face clothed with yellowish brown pile, except a lighter patch above on sides. Front not quite one-half the width of head, clothed with yellowish pile above and on sides, shining brown and bare next base of antennæ. Antennæ yellowish brown; whole head and body brown, the abdomen dark brown. Dorsum of thorax with four blackish vittæ, the vittæ clothed with black pile. Scutellum dark brown, strongly emarginate on apex. Hind femora, tibiæ and metatarsi blackish, knees narrowly pale yellowish; middle and front femora and tibiæ, brown; knees and bases of tibiæ lighter brownish. All the tarsi (except hind metatarsi) light brownish or yellowish brown. Hind metatarsi a little longer than the other joints together, thickened, very distinctly widened, but not as wide as in the male. Wings strongly fuscous, a little lighter on inner portions, but still uniformly infuscated. In the left wing the stump of vein in first posterior cell unites with a stump from the fourth vein, and is thus continued entirely across the cell, dividing it into two cells. Only a trace of this abnormal stump of fourth vein is present in the right wing.

Rock Creek, near Washington, D. C., June 15. One female.

3. *Microdon violens* n. sp.

Length 10 mm. Almost wholly light violaceous. Face brilliant vivid green, with violet reflections in oblique lights. Front dark green with violet reflections, vertex violet. Dorsum of thorax violet, with green on disc, but whether in vittæ is not apparent from bad preservation; whole abdomen and scutellum of a bright violet, with almost no green, blue, or coppery reflection. Scutellum with two not widely separated spines. Legs yellowish brown, with basal half of femora and last joint of tarsus (posterior) blackish. Wings nearly hyaline, with veins of anterior outer portions very faintly clouded.

Jamaica (Bowrey). A single specimen, apparently a female.

The face is whitish pilose. Antennæ brownish, third joint longer than first two together. Front but little less than one-third width of head. This is the first *Microdon* recorded from the island of Jamaica. I have examined the descriptions of all the South American species, including Walker's, and all the North American and Mexican species, but am unable to identify this specimen with any of them. The following species with predominating violet reflections, and especially with the face green, preclude my referring it to them for the reasons named:

M. aurifex Wd., *inequalis* Lw., *splendens* Wd., Willist., differ in having the spines of scutellum widely separated.

M. lætus Lw. differs in the tarsi of both sexes being black.

M. cyaniventris Mcq. differs in having a stump of a vein on last section of fourth vein and on vein closing discal cell, according to Macquart's figure.

M. violaceus Mcq. has scutellum without spines.

M. opulentus Big. has scutellar spines long and stout.

M. crassitarsis Mcq. has legs green, with violet reflections.

M. angustus Mcq. has legs with green reflections, and tarsi black.

When I say that the scutellar spines are not widely separated, I mean that they are not nearly so remote as shown in v. d. Wulp's figure of *M. aurifex* in the Biol. Cent.-Am., Dipt. iii.

4. ***Microdon viridis*** Towns.

San José del Cabo, Baja, Cal. (Cal. Acad. Sci.). One female. See description in Proc. Cal. Acad. Sci., 1894.

5. ***Microdon xanthopilum*** Towns.

California (Acad. Sci.). Two, ♂ ♀. Differs from *megalogaster* Snow by having abdomen yellowish pilose. For description see Proc. Cal. Acad. Sci., 1894.

6. ***Chrysotoxum derivatum*** Walk.

Fort Collins, Colorado (Gillette). One male I refer to this species. It is 15.5 mm. long, not including antennæ. The pile of thorax seems to be all yellowish. The yellow on fifth segment encloses an inverted Y-shaped marking, the base of the Y being confluent with the narrow anterior black border of the segment. The yellow of second to fourth segments agrees with Williston's description.

7. ***Chrysotoxum laterale*** Loew.

Guanajuato, Mex. (A. Dugés). One male. This specimen is apparently the same as those from Mexico mentioned by Williston in the Biol. Cent.-Am., Dipt. iii, p. 5. It is nearly 12 mm. long, and agrees in all the particulars there mentioned. Scutellum yellow, disc glassy, but nearly concolorous. Margin and base of venter rather broadly yellow, the posterior margin of segments yellow, third and fourth with a pair of yellow spots. Frontal triangle black, narrowly yellow pollinose on sides.

8. ***Chrysotoxum pubescens*** Loew.

Constantine, Mich., August 31, one female. Dixie Landing, Va., May 30, one male. I refer these here rather than to *ventricosum* because they agree in size and the coloring of the legs, though the black of fifth segment forms an inverted Y and not a V. I believe the coloring of the legs is a better specific character than the interruption or non-interruption of the band of fifth segment, especially when combined with size. The length of these two specimens is 12 mm. The second joint of antennæ is longer than the first, but the third joint is no longer in the male than in the female. In all other respects they both agree closely with Loew's description.

9. **Chrysotoxum ventricosum** Loew.

San Francisco Mountain, Arizona, July 15. One male and two females. These I refer here rather than to *integre*, because of the coloring of the legs, though in two of the specimens (♂ ♀) the second and third bands are entire, and in one of these (♀) the fourth band also. Thus two of them have an inverted Y-shaped marking on fifth segment, and the other a V-shaped. The scutellum is black across the disc. The fasciæ are narrower than in *pubescens* and *derivatum*, thus showing more black on second and third segments. Length 10–11 mm. The pile at base of abdomen is yellowish, not black, thus agreeing with *C. arcuatum*, of Europe, according to Loew. There is no yellow on hind margin of second segment, or only the slightest trace in one (♀). They otherwise agree with Loew's description.

10. **Paragus bicolor** Fabr.

Las Cruces, N. Mex., August 19; one female. Length 5 mm. Thorax, scutellum, and basal angles of abdomen have a slight greenish lustre, the scutellum margined posteriorly with yellowish white. Abdomen wholly pale red, except these lateral basal angles dark greenish. The very short white pile is not only apparent on sides and on fifth segment, but also extends across second, third and fourth segments in an anterior band, the posterior half (more on fourth) showing the band of very short black pile. Legs wholly pale reddish, except tips of femora and bases of tibiæ, light yellow.

11. **Chrysogaster nitida** Wied.

Dixie Landing, Va., and Washington, D. C. May 23 and 27, two males; October 11, one female. The female and one male agree well with descriptions. The other male has the fourth vein terminating nearly opposite the end of second, and the frontal triangle is more finely rugose, yet I would prefer to consider it the same species.

12. **Chrysogaster pulchella** Willist.

Constantine, Mich., September 1, one female. Length 5.5 mm. Antennæ longer than face, second joint fully half as long as third. Front and face with a coppery reflection; otherwise agrees well with description.

13. **Syrphus** n. sp. ?

Fort Collins, Colorado (Gillette); one female. I would refer it to *S. pauxillus* Willist. but for the great disparity in size. That

species is 7 mm. (with some specimens measuring 9 mm. referred here by Snow, while the present specimen is 13 mm. The front is yellow, with a darker reflection; vertex black. Facial stripe narrow, obsolete above tubercle; cheeks blackish posteriorly; pile of thorax yellowish. Yellow markings of abdomen agree in all particulars with Williston's description of *paucillus*, but there are no spots on front angles of fifth segment. Legs reddish yellow, base of front and middle femora and all of hind femora except tip, black. Wings hyaline; stigma elongate, flavous, occupying all of third costal cell, except a small clear portion in middle just before end of auxiliary vein.

14. **Sphaerophoria** n. sp. (?)—aff. *cylindrica* Say.

One female differs from *S. cylindrica* as follows:

♀.—Length about 6 mm.; of wing, 5 mm. Face wholly light yellow, cheeks with a blackish line bordering lower margin of eyes, oral margin narrowly blackish on edge. Front black, but the yellow of face extends up on each side about half the length of front. Pleurae greenish yellow above, shining greenish black below. Abdomen deep shining black, a slightly interrupted yellow band across second segment; a similar, but entire yellow band across third and fourth segments, that on fourth situated more anterior to middle of segment. Fifth segment with a decidedly interrupted (in middle) yellow band near front border, the inner ends of the yellow being swollen. Sixth segment yellow, with five blackish spots. Seventh segment yellowish, brownish on median base. Venter and legs light yellow, the hind tarsi brown, middle and front tarsi with a slight brownish tinge. Wings hyaline, longer than abdomen, stigma pale yellow.

Fort Collins, Colorado (Gillette).

This comes near to Williston's var. (*c.*) ♀ from New England, mentioned in his description of *S. cylindrica* (see monogr. p. 105). It may be the ♀ of this species.

15. **Baccha clavata** Fabr.

Bath, Jamaica (E. M. Swainson). One male I identify as this species. The face, however, has a steel-bluish ground color, being whitish pollinose on sides, but showing a bluish reflection. First abdominal segment is blackish, but with a bluish reflection. Vertex bluish black. Dark portions of abdomen, except first segment, opaque brown. Length nearly 10 mm.; otherwise agrees well with Williston's description of *B. babista* Walker, which is a synonym. The facial tubercle, however, is not so strongly pronounced as in Williston's figure of the head of *babista* ♀. The scutellum is brownish yellowish, with a slight metallic greenish reflection.

Las Cruces, N. Mex., June 7; one female. This specimen seems quite different from the Jamaica male, having the face clear creamy yellowish without any bluish reflection whatever. The scutellum is yellow, and very plainly brown across disc in a transverse band. All the black portions of abdomen shining black. Length only 8 mm.

Two other specimens, ♂ ♀, in Mr. C. B. Taylor's coll. agrees well with description. They are from Constant Spring, near Kingston, Jamaica, December 9.

C. W. Johnson (in MSS.) has taken and identified this species from Rock Fort, near Kingston, Jamaica.

16. **Baccha lemur** O. Sack.

Las Cruces, N. Mex., June 7; one male. It agrees well with description. Length 9 mm. Face and frontal triangle wholly metallic greenish black, faintly whitish pruinose on sides, with no yellowish; halteres with darker knobs. Abdominal cross bands light blood-reddish. Femora and tarsi more brownish. The cross band of wings extends posteriorly to anal cell, which it does not quite touch, following along the outer side of the posterior cross-vein at distal end of second basal cell. Extreme proximal end of submarginal cell with just a trace of hyaline in the angle. This is apparently the case with Osten Sacken's specimens, but is not quite clear from the descriptions.

17. **Baccha sagittifera** Austen.

Cinchona, 5000 feet, Jamaica. Described by Mr. E. E. Austen, of the British Museum, in Proc. Zool. Soc. London, 1893, pp. 144-145, pl. iv, fig. 14, from a single female, taken in June.

18. **Baccha tarchetius** Walk.

Dixie Landing, Va. (near Washington, D. C.). One male, August 19. Length 10 mm. Agrees well with Williston's description, except as follows: Hind tarsi wholly, other tarsi on distal half, brownish. The dark brown anterior border of wings fills out the first basal cell (not the first posterior) and just enters the proximal end of the first posterior, thus passing a little beyond the anterior cross-vein, thence along, but not exceeding (and at first not quite touching) third vein to tip of wing. In addition to the hyaline spot in marginal cell, there is a faint, interrupted, hyaline streak in submarginal cell, nearly obsolete, except posteriorly in the left wing.

19. **Ocyptamus dimidiatus** Fab.

Kingston, Jamaica. One female, taken March 18, in coll. C. B. Taylor. Length 7 mm. The abdomen has a purplish reflection.

20. **Ocyptamus fuscipennis** Say.

Jamaica (Bowrey); one male. Agrees well with Williston's description. The subapical hyaline triangle of the wings is normal, the rest of the wings wholly brown, with two or three faint and short streaks near middle, the axillary and anal (angle) regions paler.

A female in Mr. C. B. Taylor's coll., taken in Kingston, April 12, appears to belong to the var. *fuscipennis* Mcq., the proximal half of the discal cell being hyaline.

21. **Ocyptamus iris** Austen.

Cinchona, 5000 feet, Jamaica. One female, taken in June, is described under this name by Mr. E. E. Austen, of the British Museum, in Proc. Zool. Soc. London, 1893, pp. 133-134, pl. iv, fig. 1.

22. **Rhingia nasica** Say.

Fort Pendleton, W. Va. (Pergande), September 7. One male. Roslyn, Va., August 21, one male. The face is rather brownish yellow, or yellowish. Scutellum in one is shining black on sides, not on base; in the other black on sides and base. Wings with a flavous tinge anteriorly.

23. **Volucella abdominalis** Wied., Auss. Zweifl. ii, 196.

Jamaica (Bowrey). Seven specimens, two females and five males. Bath (Swainson). There is considerable difference in size and some in coloring between the specimens, but I am inclined to refer them all to the same species. The smallest (two males) are 13 mm., but most of them are larger (one is 14 mm., and the other four are 15 mm.).

Length 13-15 mm. Sides of thorax, pre-scutellar marking and scutellum light brown, in some cases (two small males) nearly flavous. The males have disc of thoracic dorsum shining black, but in the females it is more reddish. Abdomen cupreous brown (smaller males) or shining violaceous bluish, venter concolorous. Wings are flavous on anterior portion of basal half, with a moderately square, brown, or dark brown stigmal marking. This marking is, however, in four of the males only flavous.

This is the species mentioned by Cockerell on p. 259 of vol. i, Journal Inst. Jamaica, as "*Volucella spiniger* [British Museum]." Though the specimens seem to have been so determined at the British

Museum, still I am confident that they are *abdominalis* Wied., and not *spinigera* Wd. (for descr. of latter see Wd., Auss. Zw. ii, 197-98).

Specimens in C. B. Taylor's coll. Jamaica.

In MSS. Mr. C. W. Johnson identifies two specimens which he took in Kingston as *V. purpurascens* Loew., but they are doubtless this species.

24. ***Volucella anna*** Willist.

Williston's description is drawn from a single male. The female differs as follows, according to my specimen :

Length slightly over 13 mm. Antennæ light brown, first joint black. The third joint resembles the description given by Williston for the females of *V. comstocki*, as on its widest part it is nearly twice as wide as on its narrowed portion. Front and vertex light brown, yellowish or golden whitish pilose, ocellar spot black. Dorsum of thorax with considerable yellowish pile anteriorly. Scutellum with a milky bluish reflection in oblique lights, and somewhat the same reflection on abdomen. Costal cells not so brown, slightly flavous at base and just distad of the small brown stigma. Clouds on cross-veins, and furcation of veins two and three very faint.

Las Cruces, N. Mex. One female taken on flowering shrub on mesa, April 18.

25. ***Volucella apicifera*** n. sp.

Length 14 mm. ♀. Whole face and front pale whitish yellow, a rather faint stripe on cheeks light brownish, no facial stripe, ocellar spot blackish. Antennæ wholly yellowish red, third joint moderately notched and much widened basally, arista plumose above, but only shortly so below. Face with short yellowish pile, front with the yellow pile mixed with black, especially at vertex. Face nearly straight, receding conically below, tubercle not developed. Very near *V. isabellina* Williston with the description of which it agrees in the wings, thorax and abdomen, except as follows: Parallelogram in front of scutellum, and lateral stripe of thorax, yellowish and very distinct, same color as scutellum, but latter with black pile. Hardly a trace of black in pile of post-alar callosities. The black of thorax has two grayish pollinose median vittæ. Pleuræ thickly whitish yellow pilose. Posterior black margin of second segment not obsolete on middle, quite uniform in width throughout, except rather abruptly widened at lateral ends. The yellow of abdomen very pale whitish yellow. Second segment with a median black vitta running from hind marginal back to anterior margin of segment, uniformly a little widened anteriorly. Third segment shining bluish black, except the anterior border, which is pale whitish yellow, not interrupted, but a little emarginate in middle, a little widened laterally. Fourth and fifth segments wholly shining bluish black. The short, appressed hairs of yellowish portions whitish, of black portions black, except that the fourth segment bears longer whitish but thin pile, with a patch of short white pile on sides at anterior angles, rest of sides with black pile. Venter nearly corresponding to dorsum in coloration, the posterior black border of second segment much widened in middle and abbreviated on sides, the black of third segment reaching anterior margin in

middle, and thus narrowly interrupting the yellow anterior border. Legs wholly black, the knees and basal half of front and middle tibiae more yellowish.

Las Cruces, N. Mex., April 7. One female.

An elegant and striking species, which will easily be distinguished from *V. isabellina* by the above characters.

26. **Volucella castanea** Bigot.

Length 13 mm. Face grayish yellow, stripe of cheeks brown, darker below; no facial stripe. Scutellum, parallelogram in front of latter, and lateral stripe of thorax brownish yellow, the scutellum with something of the same reflection as the abdomen; rest of thorax greenish black, shining. Wings flavous on anterior basal portion, with three small clouds near stigma.

Guanajuato, Mexico (A. Dugès); one male. Agrees quite well with Bigot's description, and is with little doubt that species.

The abdomen is darker apically, more purplish on hind margin of third segment, though this may simply be due to discoloration.

27. **Volucella comstocki** Williston.

Las Cruces, N. Mex. One male and two females, April 18. On flowering shrubs on mesa toward Little Mt. (Tortuga). One (female) measures 9 mm.; the other two 10.5 mm. Pile of face is apparently shorter in female than in male, and is lateral in both sexes. First two antennal joints shining black, the third opaque light brown, the second also light brown in one specimen. In speaking of the wings, the "faintly clouded on the outer part and posterior border" of Williston's description consists in my specimens of a little flavous just distad of the small brown stigma.

The third antennal joint in the female is not twice as wide basally as in the narrowed portion.

28. **Volucella estebana** Towns.

San Esteban, L. Cal. (Cal. Acad. Sci.), April, 1889. A pair, ♂ ♀, *in coitu*. For description see Proc. Cal. Acad. Sci., 1894.

29. **Volucella esuriens** Fab.

Las Cruces, N. Mex. One male in valley, August 21, var. *violacea* Say, formerly known as *V. mexicana* Mcq. Face pale chestnut. Less of a violet reflection, more of a blue. Thorax, scutellum and abdomen all nearly concolorous, scutellum hardly lighter, all with a milky bluish tinge. No sign of the prescutellar lighter marking on hind edge of thorax.

Guanajuato, Mexico (A. Dugès). Two males; abdomen of a pale bronzy purplish color.

Baja California (Cal. Acad. Sci.). Numerous specimens from San José del Cabo, and other localities.

San Francisco Mt., Arizona. This species was found from the base to the summit, July 15. It was most numerous at base on a large yellow composite; was found on same flower in spruce zone (see Merriam's definition of zones); on beds of low yellow flowers below summit, and last of all on the bare volcanic rocks of the summit itself. Ten specimens (two taken by Mr. Cordley), four females and six males. These are all var. *violacea* Say (formerly known as *mexicana* Mcq.), distinguished by the strong purplish reflections instead of brownish color. It is recorded from California, Arizona, Texas, Florida, Mexico (Mcq.) and New Granada (Mcq.).

30. **Volucella evecta** Walker, var. *sanguinea* Williston.

Dixie Landing, Va. (near Washington, D. C.), May 25; one male. Length 14 mm. Frontal triangle yellow pilose, eyes black pilose. Third abdominal segment wholly black pilose; the fourth shining bluish black, and wholly orange pilose, except narrowly black pilose on hind border and continued on hypopygium. The brown spot of wings is streaked with hyaline.

31. **Volucella facialis** Williston.

Fort Collins, Colorado (Gillette). One male I refer here. The pile of dorsum of thorax is black, but that of pleuræ, sides of thorax, and all of scutellum is yellow. The pile of abdomen also is wholly yellow, that of third segment having a tinge of reddish. The third segment bears a pair of large, quite distinct yellowish brown spots, concolorous with posterior margin of second segment; extra hyaline portions of wing brownish yellow, darker opposite termination of auxiliary vein; otherwise agrees with Williston's descriptions. Length 13 mm.

32. **Volucella fax** n. sp.

Length 11.5 mm.—Comes nearest to *V. avida* O. Sack. Differs as follows: Arista thickly plumose above, and a little on apex below; frontal triangle of male shining black, thinly black pilose; face straight below antennæ. Thorax shining black, lateral borders and scutellum pale honey-yellow; pile of thorax more yellowish, of scutellum more blackish; second abdominal segment with the black posterior margin narrow, but that of third segment very wide; narrow black hind border of second segment does not reach sides of abdomen, but becomes obsolete at outer fourth or fifth of width of segment. The yellow of second and

third segments is thus confluent on each side; the black of third segment is confluent with black of second, and is but slightly narrowed anteriorly; pile of yellow portions of second and third segments yellow, but black in a strip anterior to black borders of second to third segments; of black portions, black; fourth segment wholly greenish black with yellowish pile, fifth black. Venter yellow on each side basally. Legs blackish, basal half of all the tibiae yellowish. Wings hyaline, with only a small brown spot at end of auxiliary vein; second vein irregular, *i. e.*, sinuous at its extremity. The antennae are light brown, but blackish on upper edge.

Fort Collins, Colorado (Gillette). One male.

A male from Guanajuato, Mexico (A. Dugès), differs almost wholly in its smaller size, being only 9.5 mm. long. It is correspondingly narrower. The yellow abdominal markings do not differ to any appreciable extent. I cannot help believing, however, that it is a different species, but I prefer not to describe it from a single specimen.

33. ***Volucella fornax*** Towns.

El Torte, Baja Cal. (Cal. Acad. Sci.). One male; for description see Proc. Cal. Acad. Sci., 1894.

34. ***Volucella haagii*** Jaenn.

Guanajuato, Mex. (A. Dugès). One male. Length 12 mm.; length of proboscis 5 mm.; first antennal joint brown, second and third light reddish brown; ten marginal macrochætæ on scutellum; first three tarsal joints light brown. Otherwise agrees with Osten Sacken's description, as modified by Williston.

Jamaica (Bowrey). One male. Length 13 mm. The shadowy black borders of second and third abdominal segments, due to the short black hairs, are much narrower than in the Mexican specimen, that of second segment being a mere line; stigma not so distinct, probably due to age of specimen. Scutellum shows by scars to have had ten marginal macrochætæ. Proboscis only 4 mm. long; a better preserved female specimen in Mr. C. B. Taylor's coll. was taken in Kingston, March 10.

35. ***Volucella inops*** n. sp.

Differs from *V. fax*, ♂, as follows: A narrow line of yellow on cheeks; front wide, vertex and antennal protuberance shining black, intermediate portion yellow; pleuræ, thorax and scutellum with yellowish pile. Thorax shining black, lateral borders, scutellum and two slightly elongate, longitudinal, pre-scutellar spots, light yellow; yellow of second and third abdominal segments confluent; median prolongation of black of third segment not wide, narrowed anteriorly, but confluent with black of second. Black of second segment consisting of same narrow, laterally obsolete, posterior border, the median anterior prolongation of it narrow and equal in width throughout, only a little and equally

expanded before and behind. Therefore, the second segment is yellow, except this black inverted T-marking; fourth segment greenish black, with yellowish pubescence, fifth black; pile of black portions of second segment black, also of yellow portion for a space in front of the black on each side; of rest of yellow portion yellow; pile of yellow portions of third segment almost wholly yellow; of black portions black, except laterally, where it is also yellow. Venter of second segment almost wholly light yellow, rufous on the median line connecting with the rufous, which occupies all of third segment. Legs same, but middle tibiæ more yellow, and for more than basal half, and basal joints of tarsi reddish brown. Wings same; second vein irregular, *i. e.*, sinuous. Length hardly 10 mm., not including antennæ.

Fort Collins, Colorado (Gillette). One female.

This species may be differentiated at once from *V. satur* O. S., which it approaches, by the presence of the median black stripe of face and the wholly dark fourth abdominal segment. The arista in both this species and *V. fax* is long and thickly plumose above, exceeding in length the elongate third antennal joint.

36. ***Volucella isabellina*** Williston.

Las Cruces, N. Mex., July 12. One female, agreeing well with descriptions. The abdomen is reddish discolored, instead of pale yellowish.

37. ***Volucella lucana*** Towns.

El Torte, Baja Cal. (Cal. Acad. Sci.). One female; for description see Proc. Cal. Acad. Sci., 1894.

38. ***Volucella mellea*** Jaenn.

Guanajuato, Mex. (A. Dugès). Two specimens, ♂ ♀. These specimens agree very closely with Jaennicke's description, except as follows: The pile of eyes has a blackish vertical streak in the middle. There is no sign whatever of the three vittæ on thoracic dorsum, which is uniformly shining dark greenish; first abdominal segment does not seem to be entirely black in male, and is mostly honey-yellow in female; peculiar spots on third and fourth segments in both specimens, better shown on fourth. Wings with clouds on the anterior cross-vein, termination of auxiliary, origin of third vein, tip of second vein, two cross-veins at distal end of second basal cell, and terminal portions of last two sections of fourth vein. Of the most pronounced clouds in the female are those on the anterior cross-vein and at tip of second vein. All three costal cells yellowish. The female has a stump of vein on inside of next to last section of fourth vein, but there is no sign of such in the male.

39. *Volucella obesa* Fabr.

Jamaica (Bowrey, Ckll.). Found at Kingston. Sixteen specimens, seven males and nine females. Length very constant, 10–11 mm. Antennæ vary from light brown to dark brown; arista is not black at tip, and I would not say it was “thickly plumose” for a *Volucella*. Front of female shining green, narrowed posteriorly. Eyes very short pilose; hind metatarsi same in both sexes, thickened, and as long as remaining joints together. Wings flavous on anterior portions rather than brownish; the two clouded spots are very distinct and dark brown in nine of the specimens, but faded in the other seven, in five or six being flavous.

Recorded from Jamaica by J. J. Bowrey (article on insects, Handbook of Jamaica, for 1881, p. 120). Specimens in coll. C. B. Taylor.

40. *Volucella pallens* Wd.

Bath, Jamaica. One male in Mr. C. B. Taylor’s coll. Differs from Williston’s description of *V. sexpunctata* Lw. as follows: Dorsum of thorax blackish with yellowish pubescence, the sides and prescutellar parallelogram yellowish like the scutellum. Third segment without a blackish spot in middle. Recorded in MSS. by C. W. Johnson from Port Antonio; one specimen.

41. *Volucella satur* O. Sack.

Fort Collins, Colorado (Gillette). One male. It agrees in all particulars with Williston’s description, except that the yellow portion of fourth segment has a decided reddish brown tinge; tarsi light reddish, all except the tips.

42. *Volucella sodomis* Towns.

El Torte, Baja Cal. (Cal. Acad. Sci.). Two males; for description see Proc. Cal. Acad. Sci., 1894.

43. *Volucella toltec* n. sp.

A male from Guanajuato, Mex. (A. Dugès), differs appreciably from *V. inops*. The differences are as follows: Length 9.5 mm.; eyes contiguous, frontal triangle only black at base of antennæ; fourth abdominal segment narrowly yellowish on anterior border; black border of second segment more prolonged laterally, not reaching the edge of abdomen however. Scutellum with a blackish reflection basally in oblique lights. Wings slightly flavous antero-basally,

with four brown clouds: on small cross-vein, at origin of third vein, at termination of auxiliary vein, and on cross-veins at distal end of second basal cell.

In *V. inops* ♀ only the stigma is brown, the cross-veins being hardly perceptibly clouded.

44. **Volucella vacua** Fab., Wied., Auss. Zweif. ii, 202-203.

Length 7 mm.—Antennæ pale yellowish brown; median stripe of face and front brown. Cheeks with a dark brown shining stripe, wider above; the yellowish prescutellar marking notched anteriorly; the two yellow spots of pleuræ are callosities, the posterior one bearing yellowish pile. Pile of thoracic dorsum yellowish, that of scutellum blackish. Scutellum straw-yellowish. The black of hind margin of second abdominal segment is prolonged anteriorly in a median line half way or quite to base of segment; that of third segment is prolonged anteriorly in the form of a median pair of lines reaching base of segment; that of fourth is more or less obscure, prolonged into a median spot at base of segment, in one specimen only is the spot apparent, the segment being otherwise yellowish. Pile of black portions of abdomen blackish, of rest light yellowish, all very short, that of fourth segment much longer and yellowish. The femora, and the tibiæ on basal two-thirds, yellowish. Wings sub-hyaline, with yellowish brown or brownish clouds; one extending from origin of third vein inward along the two cross-veins at distal end of second basal cell; a wider one extending from tip of auxiliary vein inward to third vein at a point posterior to the small cross-vein, and barely, or not, connected with one on the latter; and, finally, a system of more or less connected clouds occupies the apical one-third of the wing, only following the veins distally, and terminating inwardly on the fourth vein; hyaline portion of middle of wings with a whitish shade. Otherwise the specimens agree well with Wiedemann's description.

Jamaica (Bowrey). Two females.

This species was recorded from Jamaica by J. J. Bowrey, in article on "Insects," in Handbook of Jamaica, for 1881, p. 120 (Kingston, 1881). His specimens were determined at the British Museum.

Two specimens, Kingston, coll. C. B. Taylor.

45. **Sericomyia militaris** Walk.

Fort Collins, Colorado (Gillette). One male. The whitish pile of face is very scanty; the scutellum is concolorous with thorax, with same pale bluish reflection. No yellow dots on second abdominal segment. The pile of abdomen is wholly yellow, as described by Williston for the females, only a band of black pile on posterior portion of second segment. The fourth segment has a fringe of yellowish silvery pile on hind margin exactly like that of third segment. In all other respects it agrees with Williston's description; hind coxæ with tubercle. Length slightly over 14 mm.

46. **Arctophila flagrans** O. Sack.

Fort Collins, Colorado (Gillette). One female, which measures only 9 mm., I refer to this species. Only the male has been described; although the anterior cross-vein is situated well before the middle of the discal cell, and there is such a difference in size, still I am confident that the specimen must be referred here. The more robust form and pilosity indicate its affinities with the groups having the anterior cross-vein beyond or near the middle of the discal cell.

It differs from Osten Sacken's description as follows: Female.—Length 9 mm.; third antennal joint more yellowish, the two basal joints nearly black; ground color of thoracic dorsum and scutellum, seen through the yellowish pile, is metallic dark greenish, or greenish black. The middle tarsi are quite uniformly blackish, not reddish basally, like the hind tarsi. In all other respects it agrees closely with the description.

47. **Eristalis æneus** Fabr.

Washington, D. C. Three males taken May 2, August and November 28. Dixie Landing, Va., one female, July 13; agrees well with descriptions.

48. **Eristalis** n. sp. (?) aff. *atrimanus* Loew (non Williston).

Bath, Jamaica (E. M. Swainson). One female I doubtfully identify as Loew's species; and I feel assured that the species from Santo Domingo described by Williston in his monograph (pp. 173–174) is not *atrimanus* Lw., but a new species, for which I propose the name *willistoni*.

The present specimen from Jamaica agrees well with Loew's description in all except one particular; the anterior lateral spots of third abdominal segment are not æneous, but yellow like the lateral portions of second segment. The interrupted, shining, æneous fascia of fourth segment, when viewed in certain lights, shows its true ground color to be yellow; and it should also be noted that the yellow of second segment is shining on anterior median margin. Whether the markings of third segment vary in *atrimanus* ♀ from shining æneous to more yellow cannot be known until more material is obtained, and this only will decide the position of the present specimen. The latter is just the size of Loew's specimen, about 9½ mm., and possesses the oblique yellowish markings at base of wings described by Loew as connected with the pre-sutural band. Williston's specimens lack these, and are much larger, being 12 mm.

In my specimen the antennæ are, however, rather yellowish brown than black, and the wings are clear hyaline. The yellow markings of third segment are sub-semicircular and separated, touching the front margin; and the shining, interrupted band of fourth is not widened laterally.

49. **Eristalis bastardi** Mcq.

Washington, D. C., May 27. One male. Face and frontal triangle light yellowish pollinose. No black pile on thorax; reddish yellow markings of third segment distinct, and similar smaller markings distinct on anterior angles of fourth segment.

50. **Eristalis bronzi** Williston.

Hanover, N. H. (Weed). Six males and three females. Fort Collins, Colorado (Gillette), one male. The males all agree very well with the descriptions. The Colorado specimen has the yellow of abdomen a little lighter. In the females the opaque black of second segment widens out along the hind margin; and the third and fourth segments have an opaque black posterior border, connected on third with the median anterior opaque spot by an opaque line. The front is brassy pollinose, rather than reddish. Length 8-10 mm.

Another female, from Orono, Me. (Harvey), has third segment with the small opaque spot in front, fourth without; second, third and fourth rather widely whitish pollinose on hind border, the narrower margin yellowish white.

51. **Eristalis dimidiatus** Wied.

Washington, D. C., May 17-22. Two males, and one female; first two antennal joints shining brownish in the one ♀. The front of female has no median brown stripe, only a faint streak abbreviated below. All my specimens have the yellowish spots on second segment distinct; in one male those on the third segment also.

52. **Eristalis flavipes** var. *melanostomus* Loew.

Fort Collins, Colorado (Gillette). One female; on each side of middle of second abdominal segment the ground color is yellowish, anterior to which the pile is yellowish. On third segment the same spots occur, but are very faint and more reddish, and on and posterior to them the pile is yellow, continued broadly on sides of fourth segment; middle tibiæ yellowish on basal half, the yellow hairs with a few black on distal portions; a faint brown cloud extends from stigma to anterior and posterior cross-veins.

53. *Eristalis hirtus* Loew.

San Francisco Mt., Arizona, July 15. One male and two females (two coll. by Cordley); also one male, Manitou, Colo. (F. Marlatt), September 1. These specimens all show the light yellow triangles of the second segment very plainly. The face in the females is more yellowish, especially the pile of face and front; the hind femora of female are yellow at base. All have the whitish yellow hind margins of second to fourth segments distinct.

54. *Eristalis latifrons* Loew.

Las Cruces, N. Mex., two females, April 8 and 9; three males April 8, and one male June 5. One female, La Vega de San José, N. Mex., August 4; one male, Turkey Tanks, Arizona, July 17; also one male, apparently this species, from San Francisco County, Cal. (Acad. Sci.). The scutellum is translucent brownish yellow. Otherwise these agree well with Williston's description.

Var.—I have ten female specimens from Las Cruces, N. Mex., taken April 8 to June 28, and one female from Riley County, Kans. (F. Marlatt), September, which constitute a distinct series that I cannot refer to any other species. They differ from the others in having a faint but distinct brown cloud on middle of wings, the anterior base of wings being more or less flavous, and in having the yellow spots of second segment wholly obsolete or very obscure yellowish brown. One specimen in this series shows the spots pale yellowish, especially laterally, while one female (Vega de San José), that I included in the normal series, has the wings with a distinct brownish flavous cloud.

55. *Eristalis tenax* Linn.

Washington, D. C., numerous specimens, May. Guanajuato, Mex. (A. Dugés), one male; California, three specimens (Cal. Acad. Sci.).

The scutellum, which is yellowish and yellowish pilose, is omitted from Williston's description.

In all my collecting in the valley of the Rio Grande in southern New Mexico, I did not find this cosmopolitan species (up to June, 1893). It is also apparently absent from the island of Jamaica.

56. *Eristalis transversus* Wied.

Constantine, Mich., three males and two females, August 24–31. Dixie Landing and Roslyn, Va., two females and one male, August

18-21. Washington, D. C., one female and one male, May 5 and 19. Takoma, D. C., one female, September 7. These all agree well with Williston's descriptions.

57. **Eristalis tricolor** Jaenn.

Guanajuato, Mex. (A. Dugès). One female; tibiæ yellow basally.

58. **Eristalis vinetorum** F.

Bath, Jamaica (Swainson). One female measuring 13 mm., and one male measuring 9 mm. The median facial stripe in both specimens shows only as two disconnected markings; a section on facial tubercle elongate-pointed above, and a median spot on oral margin. These with the cheeks and a subtriangular marking at posterior base of antennæ, are shining pale metallic brownish. All the rest of face and frontal triangle in male is whitish pollinose and whitish pilose. Otherwise Williston's description agrees well, except that the female has the wings quite flavous on middle portion. The distal portion of first posterior cell contains a grayish cloud, as well as the marginal and submarginal cells. The hind tibiæ of both are distinctly ciliate. The prescutellar fascia is semicircular and almost, or quite, joins ends with the presutural, following the edge of the thorax around.

Mr. C. W. Johnson, in litt., determines this species from Port Antonio. This species was previously recorded from Jamaica by Walker under the synonym of *uvarum*. Specimens in C. B. Taylor's coll., Jamaica.

Trinidad (F. W. Ulrich). One female. The yellow of second abdominal segment is more extensive than in the Jamaican specimens.

59. **Eristalis** sp. No. 21, Williston, Biol. Cent.-Amer., Dipt. iii, p. 65.

Chacaltianguis, on the Papaloapam River, State of Vera Cruz, Mexico. One male taken by the writer in sweeping, Dec. 31, 1892. With little doubt this species. The antennæ are more brownish red. Abdomen is rather reddish yellow, and the black of second segment is expanded on base of abdomen into a bar forming a T-shaped marking. Agrees exactly otherwise with Williston's short description.

60. **Meromacrus cinctus** Drury.

Jamaica (Bowrey). Four (two ♂, two ♀) from Cinchona, 5000 feet (W. Fawcett). Eleven specimens, four males and seven females. Length 15-17 mm. Scutellum wholly yellowish brown, without any red tinge, but with slight blackish reflections in oblique lights. The

abdomen in my specimens is brownish red, third to fifth segments in male deeper reddish brown and shining, fourth and fifth segments and posterior margin of third in female shining deep green. One male from Cinchona has the fourth segment with a metallic bluish reflection. First and second segments quite uniformly opaque brownish red, only faintly lighter on each side of middle. The cross-band of anterior margin of third segment is very finely interrupted in middle, showing only a very delicate thread of red, in one female hardly apparent, but emarginate behind. This band in the male widens laterally, not so in the female. Lateral spot of yellow pile of fourth segment a little larger in the male. Front femora of male not thickly black pilose on posterior side like the middle pair. Wings are smoky hyaline, slightly flavous on anterior border, more deeply and widely so toward base of wing, distally filling only the fourth costal cell; spurious vein on its middle appearing enlarged, as though fractured, with a slight cloud. Otherwise agreeing with Williston's description of his Santo Domingo specimens.

A character of the wings in this genus, which seems to have been overlooked, is the presence of an extra cross-vein, forming a fourth costal cell. It is not mentioned by Macquart, Loew, or Williston. This extra cross-vein takes the place of the stigma, which is entirely absent, and joins the auxiliary vein a little before its tip with the first vein. The original third costal cell is thus formed into two cells. This is plainly shown in all of my specimens, as is also the peculiar swollen and clouded middle of the spurious vein.

There is an approach to this extra cross-vein in some specimens of *Eristalis*, the proximal portion of the stigma in the right wing of a specimen of *E. flavipes* var. *melanostomus* from Colorado almost appearing like a cross-vein. It seems apparent also in an unspurred male of *Mallota cimbiciformis*, from Washington, D. C. Williston figures the wing of *Pter. crucigera* in his monograph, but the figure indicates rather a small stigma than a cross-vein.

Mr. Cockerell has mentioned this species on p. 74 of Jour. Inst. of Jamaica as sent from Bath (Swainson).

NOTE.—The same swollen middle of the spurious vein is to be seen in many other Syrphidæ, as *Spilomyia*, etc.

The genus *Pteroptila* Lw. is a synonym of *Meromacrus* Rdi. (see Williston, "Ent. News," April, 1893).

61. **Helophilus aureopilis** n. sp. aff. *flavifacies* Bigot.

Length 10 mm.—Face, cheeks and lower half of front wholly light yellow and

yellow pilose. Antennæ wholly yellow, with an orange tinge, the arista darker terminally. Upper part of front darker, black pilose, vertex yellow pilose. Thorax yellowish pilose, with three broad blackish vittæ reaching scutellum, leaving four yellowish vittæ. Scutellum yellowish; pile of thorax and scutellum yellow, of pleuræ thickly yellow; that of abdomen short and chiefly yellow. First abdominal segment gray pollinose, except on posterior angles; yellow spots of second segment very distinctly interrupted; of third almost joined by two yellow triangular elongate spots; fourth with yellowish pollinose separated spots shaped like those of second, fifth yellow pollinose. Black of second segment expanded broadly on each side anteriorly, running on to sides of first segment. Second segment with a very narrow yellow hind margin; third with a broader yellow margin, somewhat pollinose anteriorly in middle; fourth with a yellow margin of same width and a grayish pollinose band next in front of it. Legs yellow; middle and front femora at base, hind femora in middle, hind tibiæ at tip, and hind tarsi except tip, blackish; hind tibiæ near base, and hind knees, brownish; also front tibiæ narrowly on inside at tip. Wings fuscous-hyaline, dilute flavous on more than basal half.

Constantine, Mich., August 26. One male; agrees well with Bigot's description, but as the latter is not detailed the identity cannot be certain.

62. **Helophilus latifrons** Loew.

Las Cruces, N. Mex. One female, June 8. Length 12 mm. Agrees well with Williston's description; antennæ black, arista yellow.

63. **Helophilus similis** Mcq.

Constantine, Mich. One male and one female, August 28 and 31. Length 12-13 mm. Agree well with the distinctive characters pointed out by Williston wherein the species differs from *latifrons*.

64. **Mallota cimbiciformis** Fall.

Washington, D. C. (Marlatt), May 17. One male. Length only 10.5 mm. Belonging to the form *cimbiciformis*, unspurred; pile of frontal triangle and face yellowish white, sparse; brown spot of wings faint; pile of front and middle legs more or less yellowish; pile of abdomen all black, except at base.

65. **Tropidia incana** n. sp.

Length about 7 mm. Differs from female of *T. quadrata* as follows: Face and cheeks entirely shining black, somewhat silvery pollinose. Face distinctly concave in profile. Antennæ dark reddish or reddish brown. No median pollinose stripes apparent on thoracic dorsum: whole thoracic dorsum and scutellum shining black, the latter without any yellow on the border; pleuræ also shining black. Abdomen pale red, first segment black, except hind angles; second segment with a median black vitta, which is expanded anteriorly, coalescing with the black of first segment; posteriorly it is also widened about half way to lateral edge on

each side; third segment with a similar vitta, but not at all widened anteriorly, truncate instead, posteriorly widened in a similar manner to that on second segment, but less so; fourth segment with a black subtriangular marking, truncate anteriorly; posterior borders of second and third segments reddish, very narrowly yellowish on the edge, that of fourth segment more yellowish; venter red, blackish at base in middle. Legs black, knees of anterior and middle pairs yellowish. Wings subfuscous, nearly hyaline, stigma flavous. The first posterior cell is more broadened and shortened, the last section of fourth vein bulging out more.

Fort Collins, Colorado (Gillette). One female.

It may at once be known from *T. quadrata* by its red abdomen and shining black face, combined with the absence of a yellow border on the scutellum.

66. ***Tropidia quadrata*** Say.

Washington, D. C., May 19. One male. The posterior band of second segment is wholly reddish yellow, brownish at lateral ends; rest of light color of segment yellow, leaving only an opaque black **T**, which is not inverted, and the bar of which extends on hind border of first segment. Third segment with the opaque, black, median vitta abbreviated on more than its posterior half, lapsing into reddish yellow, which spreads along hind margin of segment.

67. ***Xylota chalybea*** Wied.

Washington, D. C., May 22. One male. Length 14 mm. Dorsum of thorax and scutellum with a strong violet shade.

68. ***Xylota flavitibia*** Bigot.

Fort Collins, Colorado (Gillette). One male; pleuræ and scutellum with longer whitish pile than dorsum of thorax, which is thinly pilose. First abdominal segment wholly black, apparently without red hind angles; but the anterior angles of the red second segment appear to be very acute and to fill the place of the hind angles of the first, which seem cut off or rounded. The brownish of front and middle tibiæ is not very noticeable. Wings hyaline, only the stigma pale yellowish.

69. ***Xylota pigra*** Fab.

Washington, D. C., May 22. One female; scutellum concolorous with thoracic dorsum. Black of second segment faintly apparent in a median vitta on third, and even on base of fourth; ovipositor exerted, very long, curved under abdomen, pale brownish, not orange like the fifth segment, from which it is protruded; fifth segment subtriangular, very narrow behind; ovipositor consisting apparently of three segments.

70. **Syrirta pipiens** Linn.

Constantine, Mich., ♂ ♀. Hanover, N. H. (Weed), one female, Riley County, Kansas (F. Marlatt), ♂ ♀. Mountain View, Cal. (Ehrhorn), May to October, ♂ ♀. Las Cruces, N. Mex., one female, June 7.

This species does not seem to spread into the tropical regions of America.

71. **Spilomyia longicornis** Loew.

Constantine, Mich., August 31 to September 1, three females and two males. Dixie Landing, Va. (near Washington, D. C.), October 5, one male. Length 12–15 mm. They all agree very well with the description; the hypopygium is brown, almost shining black in the Virginia specimen. The latter also has more brown on posterior side of hind femora.

In one female the yellow bands of abdomen, except the anterior fascia of second segment, is faded into a brownish color.

72. **Spilomyia quadrifasciata** Say.

Constantine, Mich., August 21 to 31, one male and four females. Length 11–14 mm. Frontal triangle in the one male pale brownish next base of antennæ.

73. **Milesia ornata** Fab.

Washington, D. C., August 4. One male; a normal specimen.

74. **Ceria abbreviata** Loew.

Fort Collins, Colorado (Gillette). One female; the third antennal joint is light reddish brown, the tip of second joint being concolorous with it. The scutellum is widely (about two-thirds its width antero-posteriorly), bordered with yellow. The posterior yellow border of second abdominal segment is distinctly, but not greatly wider than those of third and fourth segments. Legs pale reddish, bases of hind tibiæ broadly yellow, of middle and front tibiæ more narrowly so; possesses all the other characters in detail given in Williston's description.

75. **Ceria tridens** Loew.

Las Cruces, N. Mex., April 8, one male; June 21, one female. Length 9–9.5 mm. Facial stripe brownish yellow in female; yellow extending wholly across frontal triangle, with only a thread of light brown; yellow oval spots of vertex narrowly separated in female by

a brown line, in male merged in a single, light yellow, swollen marking. The small yellow spot on the pteropleuræ is very faint in the female, wholly absent in the male; scutellum almost wholly yellow in both; yellow bands of second and third segments hardly widened laterally; grayish pollinose lateral lunate markings of fourth segment plain in female, only the ends apparent in the male; hind femora of male colored like the others, brownish ring of tibiæ very faint. Legs of female entirely ochraceous, bases of tibiæ yellow, hind tarsi brownish, otherwise the specimens agree with Williston's descriptions of the two sexes.

These two specimens I believe to belong to the same species, and are doubtless *tridens* Lw., notwithstanding the above differences. The second and third abdominal segments are of nearly equal length in both.

CONTRIBUTIONS TO THE DIPTEROLOGY OF NORTH AMERICA.

II.—TABANIDÆ, CONOPIDÆ, TACHINIDÆ, Etc.

BY C. H. TYLER TOWNSEND.

This paper is a continuation of the work begun in the first part, which was on the Syrphidæ (Trans. Am. Ent. Soc. p. 33, 1895). The present and second part embraces the three families above mentioned, and completes the author's notes and descriptions so far made on the Townsend collection, which, as before stated, now forms a part of the University of Kansas collection of North American Diptera. Therefore all of the types herein described are to be found in that collection, with the exception of a very few recently acquired, and which are duly noted.

STRATIOMYIDÆ.

1. *Pachygaster pulcher* Lw.

Las Cruces, N. Mex. A female taken on foliage, May 5, proves to be this species. Unlike the two female specimens from Montana, mentioned by Williston in "Can. Ent." 1885, p. 128, it has the femora blackish, except at base and tip. The front and third coxæ are also black, except at tips. The short pubescence of mesoscutum